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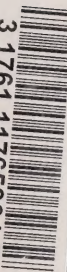
# INDUSTRY AND THE URUGUAY ROUND

**VOLUME** 3

**Metals**

Canada

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**INDUSTRY**  

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**AND THE**  

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**URUGUAY**  

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**ROUND**

***VOLUME*** **3**

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**Metals**





This booklet is third in a series pertaining to *Industry and the Uruguay Round*. These booklets as well as many other Industry Canada documents are available electronically on the Internet computer network at: [council@istc.ca](mailto:council@istc.ca).

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## Contents

Overview	3
Steel Industry	3
Aluminum Industry	15
Copper Industry	23
Nickel Industry	30
Zinc and Lead Industries	36
Impact of the GATT Uruguay Round on Measures Other than Tariffs on All Metals Industries	45



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# METALS

## Importance to Canada

### Overview

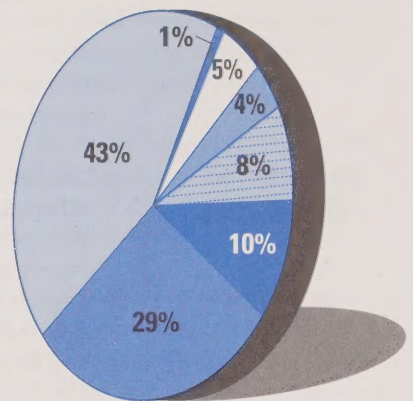
Canada's minerals and metals industry is made up of a large number of small multinational enterprises as well as large world-class integrated companies that are among the world's most competitive and sophisticated. These firms are engaged in the exploration, extraction, processing and manufacturing of minerals and metals.

In 1993, the metals industries had shipments of about \$20.1 billion and employed about 88 000 people.<sup>1</sup> In that year, they exported more than \$13.6 billion, and Canadian imports of metal products exceeded \$5.6 billion.

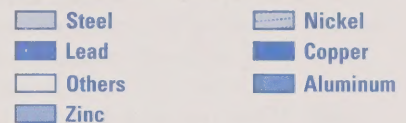
Canada's largest metals industries are steel, accounting for 43 percent of Canadian metal shipments, aluminum 29 percent, copper 10 percent, nickel 8 percent, zinc 4 percent and lead 1 percent. These industries are large by world standard: the steel industry is the world's twelfth largest, aluminum third, copper sixth, nickel second, zinc third and lead tenth.

This booklet does not discuss the impact of the trade negotiations on the ferrous and non-ferrous finished products nor on mining outputs such as iron ores. It does, however, discuss the impact of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) on large segments of the metals industry, namely steel, aluminum, copper, nickel, zinc and lead.

**Figure 1**  
**Canadian Metals Industries Shipments, 1993**



Total value = \$20.1 billion



### Steel Industry

## Importance to Canada

The steel products industry comprises firms engaged in the production of "primary rolling mill products," such as ingots, blooms, billets and slabs, sheet, strip, plate, bars, rods, structural sections and rails.

The Canadian primary steel sector consists of 15 companies. There are three integrated producers — Algoma, Dofasco and Stelco — and a number of steel and stainless steel producers.

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.





## Strengths and Weaknesses

Nearly 90 percent of the industry is privately owned and Canadian controlled. There is only one state-owned corporation, Sydney Steel, which is owned ultimately by the Government of China. In 1993, the industry had 20 establishments, which employed 33 400 people.<sup>1</sup> Shipments of steel products in 1993 were worth \$8.7 billion, of which about 71 percent were destined for the domestic market. In that year, imports of steel products amounted to about \$2.0 billion.

The establishments are concentrated in Ontario, which accounts for 70 percent of all shipments. The remainder of shipments originate in Quebec, Saskatchewan, Nova Scotia, Alberta and Manitoba.

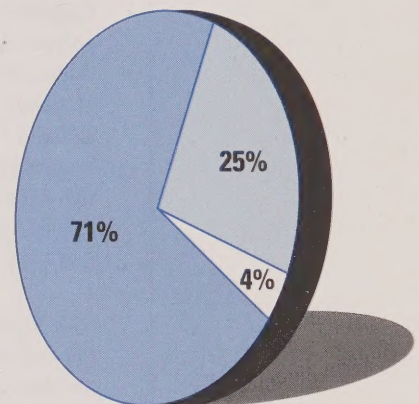
Over the six-year period ending in 1993, industry shipments grew at an average annual rate of less than 1 percent.

One of the greatest assets of the Canadian steel industry is its close proximity to the lucrative U.S. steel market. This relative advantage depends considerably on the exchange rate, although the net impact is not always clear, given that raw materials (iron ore, scrap steel, coal) are purchased on both sides of the border.

The industry is made up of large integrated mills and smaller mills, also referred to as mini-mills. Integrated mills are capital-intensive operations and are integrated backward into raw materials production (iron ore, coal, limestone) as well as forward into finished products (pipe, wire products, etc.). Mini-mills and stainless steel producers have much lower capital requirements, but higher variable costs. Some are integrated backward (scrap yards) and forward (pipe, wire products). One particular advantage enjoyed by mini-mills is that they possess the capability and flexibility to respond more rapidly to technological changes and to changing market conditions.

Mini-mills are highly vulnerable to the availability and price of scrap steel and, as such, can see significant changes to their costs. Furthermore, mini-mill steel quality can be affected by impurities in the scrap steel. It is likely that the use of new technologies, such as direct-reduced iron, hot-briquetted iron or iron carbide, will overcome both the quality problems and their reliance on scrap steel as a raw material.

**Figure 2**  
**Destinations of Canadian Steel Shipments, 1993**



Total value = \$8.7 billion

■ Canada    ■ United States  
■ Other destinations

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.



## Trade Patterns and Performance

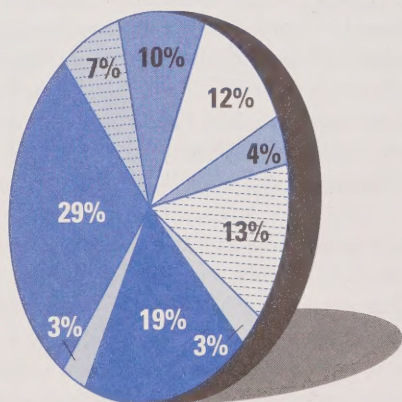
Many steel producers carry heavy debt loads, which are largely a result of significant losses between 1990 and 1992. Until recently, the industry's debt-to-equity ratio was one. The current, high debt level results in higher total costs and makes it more difficult for these firms to obtain additional financing at reasonable cost.

The steel industry experiences cyclical metal prices and is prone to the changing demands of consuming markets. Competitive companies are those that can respond relatively quickly to changes in technology and their consumers needs, and are able to achieve a cost structure that will allow a sustainable performance through all stages of the economic cycle.

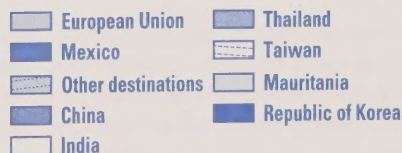
The Canadian steel industry has a highly productive and skilled labour force and, historically, has been quick to develop and adopt new technologies. Cheap foreign imports continue to pose a threat to the domestic market, especially during periods of low demand.

Trade is of vital importance to the competitiveness of the Canadian steel industry. In 1993, Canada was the world's twelfth largest exporter of steel products, accounting for nearly 3 percent of world exports. The industry is a major exporter of sheet and strip steel, steel wire rods, steel bars and light shapes, and steel pipes and tubes.

**Figure 3**  
**Steel Exports to**  
**Non-U.S. Destinations, 1993**



Total value = \$304 million



The value of exports grew at an average annual rate of 10 percent between 1988 and 1993. In 1993, the industry's exports to the U.S. at \$2.2 billion worth of steel products represented 25 percent of the value of total industry shipments. The portion exported to non-U.S. countries totalled \$304 million, or 4 percent of total industry shipments. The principal markets for non-U.S. exports were Mexico (29 percent of exports to non-U.S. destinations), Republic of Korea (19 percent), Taiwan (13 percent), India (12 percent), China (10 percent), Thailand (4 percent) and the European Union (3 percent).

Under the terms of the Canada-U.S. Free Trade Agreement (FTA), most U.S. tariffs on steel products are less than 1.5 percent as of January 1, 1995, and will fall to zero by January 1998. Under the North American Free Trade Agreement (NAFTA), which includes the addition of Mexico, all of Mexico's tariffs will be zero by January 2003.



Under the World Trade Organization (WTO), Canada's tariffs range from a minimum of 4.0 percent to a maximum of 12.5 percent. Most tariffs, however, are between 6.8 percent and 10.0 percent. Under the FTA, Canada's tariffs will fall to zero by January 1998, and under the NAFTA, Canada's tariffs will be zero by January 2003.

On the other hand, virtually all developing countries have unbound tariffs on steel products; that is, they have made no commitment not to increase their tariffs. This allows them to raise their tariffs so as to promote the replacement of steel imports with domestic production. For example, while Republic of Korea has some bound tariffs at 20 percent, the bulk of its tariffs, which are also at 20 percent, are unbound. India, which has no bound tariffs, has many of its tariffs in excess of 100 percent. In addition, in some cases, India's tariffs are supplemented with additional tariffs of \$313 per tonne (Rupee 7 000 at an exchange rate of \$0.04471). Finally, China and Taiwan have no bound tariffs, as they are not members of the WTO.

There has been a long history of trade actions taken against unfair steel trade worldwide. It is not uncommon for imported steel products that are sold on the Canadian markets or other foreign markets to be dumped and/or subsidized. Such unfair trade practices can injure domestic producers and displace Canadian sales of steel products in both the domestic and foreign markets.

Other non-tariff measures also pose a significant problem. "Buy America" provisions found in the U.S. *Intermodal Surface Transportation Assistance Act* and in the statutes of more than 30 states preclude Canadian companies from participating in many U.S. infrastructure projects. Other significant U.S. non-tariff measures include marking and labelling requirements. Uncertainty regarding tariff classification of certain steel exports may arise when U.S. customs officials must decide which products qualify for special tariff treatment under the Canada-U.S. Automotive Products Agreement (Auto Pact). Many of these issues have been addressed in the NAFTA, which provides for uniform marking standards. Furthermore, tariff classification issues will be eliminated once all U.S. tariffs on steel are reduced to zero under the FTA.

The results of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) will have a positive impact on Canada's steel sector. They will provide firms with export opportunities both in new, currently closed markets and in traditional markets, and will encourage firms to diversify beyond the U.S. market. It is, however, recognized that other non-tariff measure issues, such as unfair competition in international steel trade, remain to be addressed, as they may affect the ability of Canadian firms to diversify their export markets.

Canada's major trading partners will bind and eliminate virtually all of their tariffs on steel products in 10 annual, equal steps. The European Union and Japan will eliminate all of their tariffs by 2005. Republic of Korea will also bind all its tariffs. With the exception of its tariff on steel granules and powders, which will be 10 percent, Republic of Korea will also eliminate all its tariffs by 2005.

### **Impact of the Uruguay Round on Tariff Barriers**

Canada's other important trading partners will provide steel producers with more secure access to their markets. Most developing countries have reduced and bound all of their tariffs. For instance, India has reduced its very high tariffs, and has bound all but one at 40 percent. This will encourage Canadian steel producers to explore commercial opportunities in a number of developing countries.

Keeping pace with the other major economies, Canadian tariffs on steel products will be eliminated in 10 annual, equal steps, and will be fully implemented in 2005. While this will reduce the current level of domestic protection for the steel industry, it will tend to reduce the manufacturing cost of Canadian products made from steel and help make these products more competitive in international markets.

**Table 1**  
**Value of Exports and Sample Foreign Tariff Rates on Steel Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	Mexico	Republic of Korea		India		
			Tariff Rates	Tariff Rates		Tariff Rates		
			Current	Year Reaches Zero	Before (unbound)	After (bound)	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
7205	granules and powders, of pig iron, spiegeleisen, iron or steel	68.7	0.0	1994	10.0	10.0 & 5.0	145.0 & 115.0	40.0
7207	semi-finished products of iron or non-alloy steel	88.8	8.0	2003	10.0	0.0	90.0	40.0
720814	flat rolled products of iron, or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated — of a thickness of less than 3 mm	25.8	8.0	2003	10.0	0.0	70.0 + Rupee 2500/t	40.0
720822	flat rolled products of iron, or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated — of a thickness of 4.75 mm or more but not exceeding 10 mm	42.8	8.0	2003	20.0	0.0	45.0 + Rupee 3000/t	40.0





**Table 1 (continued)**

**Value of Exports and Sample Foreign Tariff Rates on Steel Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	Mexico Tariff Rates		Republic of Korea Tariff Rates		India Tariff Rates	
			Current	Year Reaches Zero	Before (unbound)	After (bound)	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
720823	flat rolled products of iron, or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated — of a thickness of 3 mm or more but less than 4.75	87.8	8.0	2003	10.0	0.0	70.0 + Rupee 2500/t	40.0
720824	flat rolled products of iron, or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated — of a thickness of less than 3 mm	122.8	8.0	2003	10.0	0.0	70.0 + Rupee 2500/t	40.0
720890	flat rolled products of iron, or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated — other	46.0	8.0	2003	20.0	0.0	70.0 + Rupee 2500/t	40.0
720922	flat rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated — of a thickness exceeding 1 mm but less than 3 mm	23.0	8.0	2003	20.0	0.0	45.0 + Rupee 5000/t	40.0
720923	flat rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated — of a thickness of 0.5 mm or more but not exceeding 1 mm	43.5	8.0	2003	20.0	0.0	45.0 + Rupee 5000/t	40.0

Table 1 (continued)

**Value of Exports and Sample Foreign Tariff Rates on Steel Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	Mexico Tariff Rates		Republic of Korea Tariff Rates		India Tariff Rates	
			Current	Year Reaches Zero	Before	After (bound)	Before (unbound)	After
		(\$ millions)	(percent)					
721012	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated — plated or coated with tin — of a thickness of less than 0.5 mm	66.9	0.0	1994	unbound 20.0	0.0	not provided	unbound
721049	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated — other	252.1	12.0 & 8.0	2003	unbound 20.0	0.0	125.0 + Rupee 7000/t	bound 40.0
721050	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated — plated or coated with chromium oxides or with chromium and chromium oxides	30.5	0.0 & 8.0	1994 & 2003	unbound 20.0	0.0	145.0	bound 40.0
721070	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated — painted, varnished or coated with plastics	22.4	12.4 & 8.0	2003	unbound 20.0	0.0	125.0 + Rupee 7000/t	bound 40.0
721129	flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated — other	39.5	8.0	2003	bound 20.0	0.0	45.0 + Rupee 5000/t	bound 40.0



**Table 1 (continued)**

**Value of Exports and Sample Foreign Tariff Rates on Steel Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	Mexico Tariff Rates		Republic of Korea Tariff Rates		India Tariff Rates	
			Current	Year Reaches Zero	Before	After (bound)	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
7213	bars and rods, hot rolled, in irregularly wound coils, of iron or non-alloy steel	250.5	8.0	2003	bound 20.0 unbound 20.0	0.0	105.0 & 115.0	40.0
7214	other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling	123.7	8.0	2003	unbound 10.0 bound 20.0	0.0	105.0 & 115.0	40.0
721510	other bars and rods of iron or non-alloy steel, of free-cutting steel not further worked than cold-formed or cold-finished	31.7	8.0	2003	unbound 20.0	0.0	115.0	40.0
7216	angles, shapes and sections of iron or non-alloy steel	134.2	8.0	2003	unbound 20.0	0.0	105.0	40.0
721890	stainless steel in ingots or other primary forms; semi-finished products of stainless steel — other	68.4	8.0	2003	unbound 10.0	0.0	345.0	40.0
721912	flat-rolled products of stainless steel, of a width of 600 mm or more — of a thickness of 4.75 or more but not exceeding 10 mm	34.6	0.0 & 8.0	1994	unbound 20.0	0.0	250.0	40.0
7225	flat-rolled products of other alloy steel, of a width of 600 mm or more	258.7	0.0–8.0	1994 & 2003	unbound 10.0 & 20.0	0.0	115.0	40.0



Table 1 (continued)

**Value of Exports and Sample Foreign Tariff Rates on Steel Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	Mexico Tariff Rates		Republic of Korea Tariff Rates		India Tariff Rates	
			Current	Year Reaches Zero	Before (unbound)	After (bound)	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
722790	bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel — other	46.5	8.0	2003	10.0	0.0	115.0	40.0
722830	other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel — other bars and rods, not further worked than hot-rolled, hot drawn or extruded	122.7	8.0	2003	10.0	0.0	115.0	40.0
730210	railways or transway track construction material of iron or steel, the following: rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers (cross-ties), fish-plates, chairs, chair edges, sole plates (base plates), rail clips, bedplates, ties and other material specialized for jointing or fixing rails — rails	80.3	0.0 8.0	1994 2003	20.0	0.0	85.0	40.0
Subtotal: major exports		2 111.9						
Total: all steel exports		2 543.5						



**Table 2**  
**Value of Imports and Canadian Tariff Rates on Selected Steel Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
720711	semi-finished products of iron or non-alloy steel — of rectangular (including square) cross-section, the width measuring less than twice the thickness	40.1	4.0	0.0
720712	semi-finished products of iron or non-alloy steel — other, of rectangular (other than square) cross-section	188.3	4.0	0.0
7208	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated	120.7	6.8 & 9.8	0.0
720912	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated — of a thickness exceeding 1 mm but less than 3 mm	23.1	8.0	0.0
720913	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated — of a thickness of 0.5 mm or more but not exceeding 1 mm	47.8	8.0	0.0
7210	flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated	388.1	6.8–8.0	0.0
721129	flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated — other	32.7	6.8	0.0
721149	flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated — other	33.8	7.5	0.0
721250	flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated — otherwise plated or coated	26.8	8.0	0.0
721320	bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel — of free-cutting steel	21.0	6.8	0.0

Table 2 (continued)

**Value of Imports and Canadian Tariff Rates on Selected Steel Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
721331	bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel — of circular cross-section measuring less than 14 mm in diameter	40.2	6.8	0.0
721350	bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel — other, containing by weight 0.6% or more of carbon	33.9	6.8	0.0
7214	other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling	73.5	6.8 & 7.3	0.0
721633	angles, shapes and sections of iron or non-alloy steel — H sections	37.6	6.8	0.0
7219	flat-rolled products of stainless steel, of a width of 600 mm or more	165.6	10.0–12.5	0.0
722020	flat-rolled products of stainless steel, of a width of less than 600 mm — not further worked than cold-rolled (cold-reduced)	53.3	10.0 & 12.5	0.0
7225	flat-rolled products of other alloy steel, of a width of 60 mm or more	71.0	10.0 & 12.5	0.0
722610	flat-rolled products of other alloy steel, of width of less than 600 mm — of silicon-electrical steel	48.0	10.0 & 12.5	0.0
7228	other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel	96.0	7.8–12.5	0.0





**Table 2 (continued)**  
**Value of Imports and Canadian Tariff Rates on Selected Steel Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
730210	railways or transway track construction material of iron or steel, the following: rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers (cross-ties), fish-plates, chairs, chair edges, sole plates (base plates), rail clips, bedplates, ties and other material specialized for jointing or fixing rails — rails	25.6	6.8 & 7.8	0.0
Subtotal: major exports		1 567.1		
Total: all steel exports		1 972.1		

## Importance to Canada

### Aluminum Industry

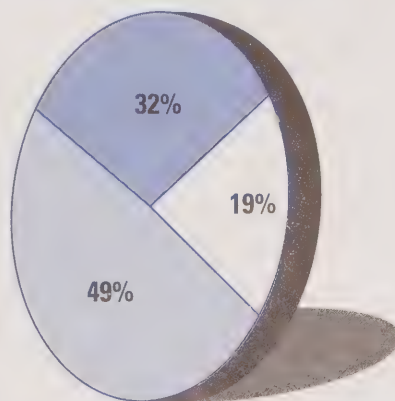
The aluminum industry comprises firms engaged in the production of primary aluminum from alumina and recycled aluminum, and the manufacture of semi-fabricated aluminum products. Examples of these products are sheets, strips, bars, rods, wire rods, non-electrical wire and cable, powders, cast parts, pipes and tubes, and extruded shapes such as profiles for windows, tubes for shower curtains and refrigerators and automotive trims.

The Canadian aluminum industry is composed of one large, vertically integrated, Canadian-owned multinational company — Alcan Aluminum Limited (Alcan) — one large, vertically integrated, U.S.-owned company — Canadian Reynolds Metals (Reynolds) — several subsidiaries of multinational enterprises, which operate aluminum smelters, and a number of semi-fabricating companies, including Alcan, Reynolds and Indalex. In 1993, the aluminum industry had about 100 establishments, which employed 23 000 people.<sup>1</sup> Shipments of primary and semi-fabricated aluminum products were worth \$5.9 billion, of which about 32 percent were destined for the Canadian market. Imports amounted to \$1.4 billion.

The primary aluminum industry is located primarily in Quebec, which accounts for 88 percent of shipments, or \$3.4 billion. The remainder of shipments originate in the province of British Columbia. The semi-fabricated aluminum segments of the industry is concentrated in Ontario and Quebec, which account for more than 80 percent of shipments, or \$1.6 billion.

Over the seven-year period ending in 1993, the industry's shipments grew at an average annual rate of about 4 percent. The value of shipments, however, varied considerably from year to year mainly because of cyclical fluctuations in aluminum prices. Aluminum prices have recovered during 1994, as metal demand is remaining strong and inventories are declining. At the end of 1994, aluminum prices exceeded \$2 731 per tonne (US\$2 000 at an exchange rate of US\$1 = C\$1.3659), which is a 75 percent increase over the previous year's prices.

**Figure 4**  
**Destinations of Canadian Aluminum Shipments, 1993**



Total value = \$5.9 billion

Canada      United States  
Other destinations

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.



## Strengths and Weaknesses

This section discusses the primary and semi-fabricated aluminum segments of the industry separately, as they each have distinct strengths and weaknesses.

### ***Primary Aluminum***

The key factors influencing the competitiveness of the production of primary aluminum are access to energy as well as to materials, labour and capital. Canada has no domestic sources of bauxite, the mineral from which alumina and, subsequently, aluminum are produced. Therefore, Canadian aluminum smelters must import bauxite or alumina, either through related companies or through direct purchases on the open market. This apparent disadvantage is offset by Canada's abundant and relatively inexpensive supply of hydro-electrical energy, as well as by its proximity to major markets and shipping routes.

Aluminum production is capital-intensive, with current installed smelter costs, not including hydro-electrical generation, exceeding \$5 000 per tonne of annual production capacity. For a plant that would need to construct a dedicated power generation facility, the capital requirement would be approximately double this amount.

Aluminum is traded mostly through direct supply contracts or on commodity exchanges. World prices are established primarily on the London Metal Exchange (LME) or the Commodity Metals Exchange (COMEX), and are generally quoted in U.S. dollars.

Energy cost is, after alumina, the single most important variable cost component associated with aluminum production, followed by labour cost. Therefore, decisions on new aluminum smelting projects are based primarily on the assured availability of competitively priced energy (generally hydro-electricity, but also flare gas in oil-producing countries, or coal deposits located near thermal power plants). Many aluminum smelters located in Japan, the United States and Europe, which use costly forms of energy such as fossil fuels or nuclear power, have become non-competitive with new, ultra-modern smelters, particularly those located in Canada.

In Canada, most multinational enterprises have signed long-term, risk-sharing energy supply contracts with Hydro-Québec; this is a common practice in a number of aluminum-producing countries. Alcan fully owns and operates large hydro-electric power plants in Quebec and British Columbia. Reynolds also produces a large share of the electricity requirements for its Baie-Comeau smelter from the operation of a hydro-electric power plant combined with a newsprint plant.

In other major aluminum-producing countries, which compete directly with Canada, such as Australia and Venezuela, aluminum production has grown rapidly as smelters have gained access to low-cost energy and rich domestic bauxite deposits. Brazil, which modernized its production capacity a few years ago, is no longer able to offer inexpensive energy, because it has reached capacity constraints due to the enormous consumption of electricity required to support its last round of aluminum plant expansions.



In other important aluminum-producing countries, which are also the largest aluminum-consuming markets, namely, the United States and the European Union (EU), the economic viability of a number of aluminum smelters is precarious because of their dependence on external factors. One is the high costs they pay for energy, which accounts for approximately 30 percent of the aluminum production cost, and so their operating costs are well above the world average. Another critical factor is the value of the U.S. currency relative to other major currencies. For instance, the devaluation of the U.S. dollar and the rise in aluminum prices have resulted in the reactivation of some U.S. smelting facilities, which are now able to produce competitively, at least temporarily. In the EU, the devaluation of the U.S. dollar has meant an increase in operating costs, although this has been partly offset by an increase in aluminum prices. However, the EU's aluminum smelters are generally small by world's standard, with higher operating costs, and remain at a competitive disadvantage.

### ***Semi-fabricated Aluminum***

With the exception of specific products such as aluminum sheet, the Canadian semi-fabricated segment of the aluminum industry utilizes relatively short production runs to manufacture a multitude of products for the small domestic market. Canada's main competitors are the U.S. plants, which are usually larger, thus enjoying economies of scale, and which tend to be more efficient.

The strength of the Canadian industry lies with companies that produce high-quality, competitively priced products for selected market niches. While a number of these firms are relatively small, they are able to effect line changes more rapidly and to fill orders on a very short notice. Some of these firms are diversifying into new product lines, while others, encouraged by the trade liberalization in North America, are entering or expanding into export markets.

Semi-fabricated aluminum products tend to have a relatively low value per unit of weight, so shipping cost can be a significant factor in the delivered cost of a product. Therefore, the most economic plant location is generally the one closest to the major market. Plants can compete only within a limited economic radius of their major markets.

While some sectors of the semi-fabricated aluminum industry such as large rolling mills are capital-intensive, other segments such as casting are less so. The industry is potentially vulnerable to competition in the U.S. and Canadian markets from South American countries, which enjoy lower (sea) transportation costs, and from foreign state-owned competitors, which benefit from subsidized prices and preferential policies. These imports, however, are sporadic, leaving the U.S. industry as the Canadian industry's main competitor.

With the exception of Alcan's Kingston, Ontario, sheet rolling mills, most of the manufacturing capacity of the semi-fabricated segment of the Canadian aluminum industry is smaller in scale than its U.S. counterparts. As a result of recent divestitures and changes in ownership, especially in the building products sector, the Canadian industry has become more specialized and focused on a reduced number of products lines.



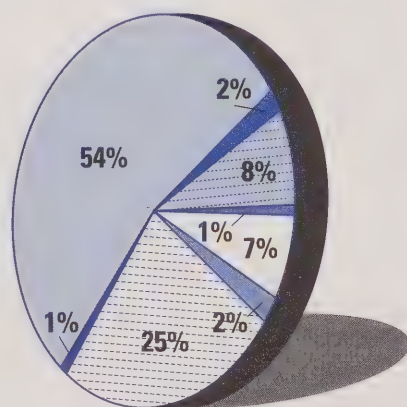
## Trade Patterns and Performance

A number of extruders are small firms and have the strengths and weaknesses typical of small firms. Nevertheless, the sector is considered to be in a position to exploit new opportunities because of the flexibility and responsiveness of its manufacturing facilities.

The major strength of the extruded aluminum sector is the ability of firms to meet competitively the needs of market niches (e.g. automotive aluminum die castings, or gas barbecue shells for the consumer market). Its main weakness is the large number of small firms with limited resources and geared to customized orders that require frequent set-up changes. The automotive portion of this sector competes successfully in the northern U.S. market.

Trade is the lifeblood of the Canadian aluminum industry, particularly the primary segment, and ensures its competitiveness in the Canadian as well as the foreign markets. The industry is a major exporter of unwrought aluminum, plate, sheet and strips, waste and scrap, forgings and castings, wire, bars and rods.

**Figure 5**  
**Aluminum Exports to**  
**Non-U.S. Destinations, 1993**



Total value = \$1 079 million

European Union	Other destinations
Israel	Turkey
Republic of Korea	Japan
Taiwan	Hong Kong

The value of exports grew at an average annual rate of more than 6 percent<sup>1</sup> between 1987 and 1993. In 1993, the industry's exports to the U.S. of \$2.9 billion worth of aluminum products represented 49 percent of the value of all its shipments. The portion exported to non-U.S. countries totalled \$1.1 billion, or 19 percent of total shipments. The principal markets for non-U.S. exports were the European Union (54 percent of exports to non-U.S. destinations), Japan (25 percent), Republic of Korea (8 percent), Turkey (2 percent), Israel (2 percent), Taiwan (1 percent) and Hong Kong (1 percent). The other important destinations were Lebanon, Thailand, Saudi Arabia, Pakistan and China.

The globalization of markets will continue to force the international readjustment of the aluminum industry, particularly the primary segment. For instance, Japan's aluminum industry has virtually divested itself of its domestic aluminum smelters because of their high energy cost, while investing in the primary aluminum industry of foreign countries such as Canada. The extended weakness in primary aluminum prices has forced a growing number of smelters in France, Germany, Italy and Spain to reduce substantially their production permanently.

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.

In the future, Russia and the other republics of the former Soviet Union, with their combined population of 285 million people and their per-capita aluminum consumption at less than 15 percent of the North American level, will reduce their exports of aluminum on international markets as their economic situation improves. This will result in increased demand for Canadian aluminum.

Under the terms of the Canada-U.S. Free Trade Agreement (FTA), U.S. tariffs on aluminum products are less than 1.6 percent as of January 1, 1995. All U.S. tariffs on primary aluminum products are zero. U.S. tariffs on semi-fabricated aluminum products will be reduced to zero by January 1998. Under the North American Free Trade Agreement (NAFTA), all of Mexico's tariffs will be zero by January 2003.

Canada's major trading partners have relatively high tariffs on aluminum products. With the exception of its tariff on aluminum waste and scrap, EU tariffs range from 6 percent on primary aluminum products to 10 percent on semi-fabricated aluminum products. With two exceptions, Japan's tariffs vary from 1 percent on primary aluminum products to a high of 11.5 percent on semi-fabricated aluminum products. For its part, Republic of Korea has bound two of its tariffs on primary aluminum products (i.e. it has made a commitment not to increase those tariffs), but they are at 10 percent. All of Republic of Korea's other tariffs on primary and semi-fabricated aluminum products, which are as high as 25 percent, are unbound.

Generally, Canada's other important trading partners have unbound tariffs on aluminum products, which may be raised in order to promote domestic production to replace aluminum imports. Turkey is an exception, as it has bound some of its tariffs on semi-fabricated aluminum products at rates between 20 and 24 percent; all of Turkey's other tariffs are unbound. Israel, which has no bound tariffs, has tariffs ranging from zero to 20 percent. All of Hong Kong's tariffs are unbound. Taiwan, Saudi Arabia and China have no bound tariffs, as they are not members of the World Trade Organization (WTO).

Under the WTO, Canada's tariffs range from zero on aluminum waste and scrap to 10.3 percent on aluminum products, mainly primary and semi-fabricated aluminum products. Under the FTA, Canada's tariffs will fall to zero by January 1998. Under NAFTA, Canada's tariffs will be zero by January 2003.

Non-tariff measures affect the ability of the Canadian aluminum industry to sell its products in foreign markets. The principal non-tariff measures include subsidies to the local aluminum industry, standards, and import substitution and preferential policies that favour indigenous aluminum industries.



## **Impact of the GATT Uruguay Round on Tariff Barriers**

The results of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) will have a positive impact on Canada's aluminum industry. They will provide firms with export opportunities in traditional markets, as well as in foreign markets which were effectively closed because of high tariff and non-tariff barriers. This will help firms increase their market diversification.

The trade liberalization combined with the industrial adjustment taking place in countries such as Japan will favour Canadian exports of primary aluminum products. In addition, the recent structural adjustment in the Canadian semi-fabricated aluminum segment of the industry will help it take advantage of the trade liberalization in a number of countries. This is expected to result in increased exports of the higher value-added, semi-fabricated aluminum products and in increased investment opportunities in this segment of the industry.

Canada's major trading partners will bind and, with the exception of the EU, will reduce significantly their tariffs on aluminum products in five annual, equal steps. The new tariffs will be fully implemented in January 1999. The EU will not reduce its tariffs on primary aluminum products, but will reduce its tariffs on semi-fabricated aluminum products to 6.0 and 7.5 percent. Japan will eliminate its tariffs on primary aluminum products; with one exception where the tariff will be zero, its tariffs on semi-fabricated aluminum products will range from 2.0 to 7.5 percent. Republic of Korea will bind all of its tariffs and will reduce them by more than 50 percent; its new tariffs on primary aluminum products will not exceed 5 percent, while its tariffs on semi-fabricated aluminum products will be either 10 percent or 13 percent, depending on the products.

With some exceptions, Canada's other important trading partners will bind their tariffs. Some will accompany this with tariff reductions, and others with tariff increases. The trade-off will be greater security of access to their markets, as they will not be able to increase their tariffs. Turkey, while not increasing the number of bound tariffs, will reduce the level to a maximum of 18.4 percent on a range of semi-fabricated aluminum products. With the exception of two of its tariffs on primary aluminum, Israel will bind all of its aluminum tariffs. However, it will realign these tariffs so that some of its tariffs on aluminum waste and scrap and some on selected semi-fabricated aluminum products will increase, while the others will decrease.

Some developing countries will offer more secure market access by binding many of their tariffs. For instance, Hong Kong's tariffs on primary and some semi-fabricated aluminum products will be bound at zero. This will provide encouragement to Canadian aluminum producers to explore trade opportunities in a number of developing countries.

Canada's tariffs on aluminum products will be reduced in five annual, equal steps, and will not exceed 6.8 percent when fully implemented in 1999. While this will reduce the current level of domestic protection afforded to the aluminum industry, it will also tend to reduce the manufacturing cost of Canadian products made from aluminum and help to make these products more competitive on the Canadian and international markets.



Table 3

**Value of Exports and Sample Foreign Tariff Rates on Aluminum Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	European Union Tariff Rates		Japan Tariff Rates		Republic of Korea Tariff Rates	
			Before	After	Before	After	Before	After (bound)
		(\$ millions)	(percent)					
760110	aluminum unwrought, not alloyed	1 704.9	6.0	6.0	1.0	0.0	bound 10.0	5.0
760120	aluminum unwrought, alloyed	1 243.6	6.0	6.0	1.0	0.0	bound 10.0	5.0
760200	waste and scrap	246.4	3.2-0.0	0.0	0.0	0.0	unbound 10.0	3.0
760429	bars, rods and other profiles, aluminum alloyed	46.3	10.0	7.5	11.5	7.5	unbound 20.0	10.0
760521	wire, aluminum alloy, with maximum cross sectional dimension exceeding 7 mm	52.2	10.0	7.5	11.5	7.5	unbound 20.0	10.0
760611	plate, sheet or strip, aluminum not alloyed, exceeding 0.2 mm	135.2	10.0	7.5	3.0	2.0	unbound 20.0	10.0
760612	plate, sheet or strip, aluminum alloy, exceeding 0.2 mm	375.8	10.0	7.5	0.0 & 3.0	0.0 & 2.6	unbound 20.0	10.0
761090	structures and parts, e.g. plate, rods	34.5	7.0	6.0	5.1	3.0	unbound 25.0	13.0
761290	containers, capacity less than 300 L	42.9	7.0	6.0	5.8	3.0	unbound 25.0	13.0
761690	articles of aluminum, such as forgings, castings	57.2	7.0	6.0	5.1	3.0	unbound 20.0 & 25.0	10.0 & 13.0
Subtotal: major products		3 939.0						
Total: all exports		4 002.1						



**Table 4**

**Value of Imports and Canadian Tariff Rates on Selected Aluminum Products, Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
760110	aluminum unwrought, not alloyed	61.5	10.3 & \$0.0198/kg	6.8 & \$0.0131/kg
760120	aluminum unwrought, alloyed	124.6	10.3 & \$0.0198/kg	6.8 & \$0.0123/kg
760200	waste and scrap	64.4	0.0	0.0
760429	bars, rods, and other profiles, aluminum alloyed	43.7	2.1 & 10.3	1.4 & 6.8
760611	plate, sheet or strip, aluminum not alloyed, exceeding 0.2 mm	53.0	2.1 & 10.3	1.4 & 6.8
760612	plate, sheet or strip, aluminum alloyed, exceeding 0.2 mm	730.5	2.1 & 10.3	1.4 & 6.8
761090	structures and parts, e.g. plate, rods	28.2	10.3	6.8
761290	containers, capacity less than 300 L	53.5	10.3	6.8
761690	articles of aluminum, such as forgings and castings	94.2	10.3	6.8
Subtotal: major products		1 253.6		
Total: all imports		1 375.6		

## Copper Industry

### Importance to Canada

The copper products industry comprises firms engaged in the smelting and refining of copper and its processing into semi-fabricated products for the manufacture of industrial and consumer products.

The Canadian copper industry is composed of four large, multinational, vertically integrated, smelting and refining companies — Noranda Minerals Inc., Inco Limited, Falconbridge Limited and Hudson Bay Mining and Smelting Co. Limited — a smaller mining company with some refining capability — Gibraltar Mines Limited — and a number of semi-fabricating companies, including Philips Cables and Wolverine Tubes. In 1993, the industry had 48 establishments, which employed approximately 5 500 people.<sup>1</sup> Shipments of refined and semi-fabricated copper products in 1993 were worth \$1.8 billion. The domestic market accounted for only 14 percent of all shipments. Imports of copper products amounted to \$563 million.

The industry is concentrated in Quebec, Ontario, Manitoba and British Columbia, which account for virtually all of the shipments.

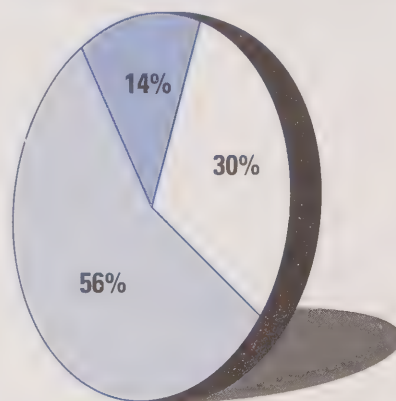
Over the six-year period ending in 1993, shipments of refined copper grew at an average annual rate of slightly more than 1 percent, whereas shipments of semi-fabricated copper products declined by 46 percent, primarily because of the economic slowdown.

### Strengths and Weaknesses

The key factors influencing the competitiveness of Canadian smelting and refinery operations are world market conditions, economies of scale, availability of raw materials at competitive cost, the presence of co-products, the level of technology, environmental regulations, location and proximity to markets.

Canadian operations are world-scale, with the operations at Sudbury, Ontario, and at Rouyn-Noranda and Montreal, Quebec, being among the largest in the world. Most facilities employ state-of-the-art technology, much of which was developed in Canada.

**Figure 6**  
**Destinations of Canadian Copper Shipments, 1993**



Total value = \$1.8 billion

■ Canada      ■ United States  
□ Other destinations

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.



## Trade Patterns and Performance

Copper is traded mostly through direct supply contracts or on commodity exchanges. World prices are established on the London Metal Exchange or Commodity Metals Exchange. Prices are quoted in U.S. currency.

Average Canadian production costs for refined copper are toward the low end of the world cost spectrum. The world's lowest-cost copper is produced in Chile, with costs at about 70 percent of the Canadian level, while copper production in Europe is at cost levels up to 50 percent higher than the Canadian average.

Copper concentrates produced in British Columbia are primarily exported, as they are not currently considered to be an economic source of feedstock for eastern smelters because of the cost of inland transportation.

A combination of competitive plants, successful mine development and the value of contained precious metals has maintained the competitiveness of the vertically integrated firms. Domestically sourced primary inputs are augmented by recycled copper and by imported American copper concentrates.

The polymetallic ores of the Canadian Shield give the integrated Canadian producers an advantage, because they contain valuable co-products, such as gold, silver, platinum and other precious metals. Copper is most often found in conjunction with nickel or zinc. The sum of the revenues available from sales of all these metals is important in establishing the strong competitive standing of the Canadian companies operating mines, smelters and refineries. Another aspect of this polymetallic nature of the ores, however, is the difficulty of separating one metal from another, which requires complex, high-cost processing and a strong research and development capability.

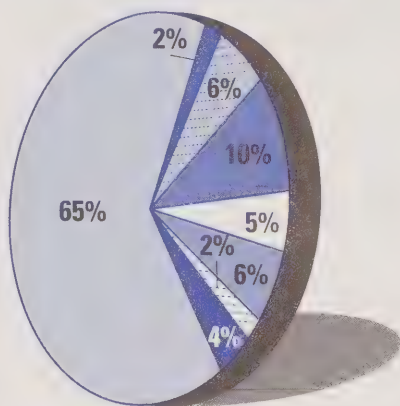
Two key factors affecting the competitiveness of the Canadian semi-fabricated industry are access to economic transportation, in particular water transportation, and proximity to markets.

Trade is the lifeblood of the Canadian copper industry and ensures its prosperity. The industry is a major exporter of copper cathodes, copper waste and scrap, and, to a lesser extent, copper wires, bars, pipes and tubes.

The value of exports grew at an average annual rate of about 5 percent between 1988 and 1993. In 1993, the industry's exports to the U.S. at \$1.0 billion worth of copper represented 56 percent of the value of all its shipments. In addition, the industry's exports to non-U.S.



**Figure 7**  
**Copper Exports to**  
**Non-U.S. Destinations, 1993**



**Total value = \$529 million**

European Union	Other destinations
Republic of Korea	Taiwan
Colombia	India
Norway	Saudi Arabia

tariffs will be eliminated by January 1998. Under the NAFTA, Canada's tariffs will be zero by January 2003.

On the other hand, with the exception of the EU market, Canada's access to foreign markets is limited and insecure. EU tariffs on primary copper products are zero, while its tariffs on semi-fabricated copper products are at 6 percent. Japan's tariffs on all primary copper products except copper waste and scrap are \$0.29 per kilogram (¥21 per kilogram at an exchange rate of \$0.01401), while its tariffs on semi-fabricated copper products are at either 7.2 percent or 6.5 percent. With the exceptions of its tariffs on copper bars and tubes, Norway's tariffs are zero.

Virtually all developing countries have unbound tariffs on copper products (i.e. they have made no commitments not to increase their tariffs), which allow them to raise their tariffs so as to encourage import substitution. For example, Colombia's tariffs, which are as high as 30 percent, are all unbound. With the exception of its tariff on copper mattes, Republic of Korea's tariffs, which range from 10 percent to 25 percent, are unbound. India has no bound tariffs on copper products. Taiwan and Saudi Arabia have no bound tariffs, as they are not members of the WTO.

Currently, there are no significant non-tariff measures, which restrict access to foreign markets. The industry, however, faces some challenges, which in the long term may affect its access to international markets. These challenges include government regulations related to environmental

countries amounted to \$529 million, or 30 percent of total shipments. Apart from the U.S. market, the principal foreign markets were the European Union (EU), which accounted for 65 percent of Canadian exports to non-U.S. destinations, Norway (10 percent), Colombia (6 percent), Taiwan (6 percent), Saudi Arabia (4 percent), Republic of Korea (2 percent) and India (2 percent).

Under the terms of the Canada-U.S. Free Trade Agreement (FTA), U.S. tariffs on primary copper products have fallen to zero, while tariffs on semi-fabricated copper products are less than 2 percent as of January 1, 1995. They will fall to zero by January 1998. Under the North American Free Trade Agreement (NAFTA), all of Mexico's tariffs will be zero by January 2003.

Under the World Trade Organization (WTO), most of Canada's tariffs range from 4.0 percent to 10.3 percent. Under the FTA, Canada's



## Impact of the GATT Uruguay Round on Tariff Barriers

and health issues. In the pursuit of sustainable development, multilateral organizations and participating governments are developing policies and strategies to reduce the perceived risks associated with the production, transportation, use and disposal/recycling of chemicals. Minerals and metals are a major target of multilateral organizations activities, as the definition of chemicals includes all minerals, metals and their compounds.

The outcome of agreements or exercises designed to deal with these issues can lead to the imposition of severe constraints or even the outright prohibition on the production, use or trade of commodities or their products. For example, such activities have led to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and the Organisation for Economic Co-operation and Development chemical risk-reduction exercise.

The results of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) will have a positive impact on Canada's copper sector. They will provide firms with new export opportunities in non-traditional markets as well as increased opportunities in traditional markets, and will encourage firms to increase their market diversification.

Canada's major trading partners will reduce substantially their tariffs on copper products in five annual, equal steps. Their commitments will be fully implemented by January 1999. The EU tariffs on semi-fabricated copper products will be reduced to 4.8 percent. Norway's remaining tariffs will fall to 3.8 percent or zero, depending on the products. Japan's tariffs on primary copper products will range from zero to \$0.14 per kilogram (¥9.7 per kilogram), while its tariffs on semi-fabricated products will fall to 3 percent. Republic of Korea has bound all its tariffs. Its tariffs on primary copper products will not exceed 10 percent, while its tariffs on semi-fabricated products will be a maximum of 13 percent.

Canada's other important trading partners will provide copper producers with enhanced and more secure access to their markets. Many developing countries have bound their tariffs. For instance, Colombia has bound its tariffs at 35 percent. The improved and more secure market access will provide copper producers with an incentive to seek export opportunities in a number of developing countries.

On the other hand, a number of developing countries such as India will continue to have unbound tariffs on copper products. Access to these markets will remain insecure.

Canada's tariffs on copper products will be reduced in five annual, equal steps, and will be fully implemented in 1999. With one exception, its tariffs will not exceed 3.0 percent. While this will reduce the current level of domestic protection afforded to the copper industry, it will also tend to reduce the manufacturing cost of Canadian products made from copper and will help to make these products more competitive on the Canadian and international markets.

Table 5

**Value of Exports and Sample Foreign Tariff Rates on Copper Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	European Union Tariff Rates		Norway Tariff Rates		Colombia Tariff Rates	
			Before	After	Before	After	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
740110	copper mattes; cement copper (precipitated copper) — copper mattes	54.3	0.0	0.0	0.0	0.0	10.0	35.0
740311	refined copper and copper alloys, unwrought — refined copper — cathodes and sections of cathodes	987.9	0.0	0.0	0.0	0.0	10.0	35.0
740312	refined copper and copper alloys, unwrought — refined copper — wire-bars	34.6	0.0	0.0	0.0	0.0	10.0	35.0
740400	copper waste and scrap	233.6	0.0	0.0	0.0	0.0	10.0	35.0
740710	copper bars, rods and profiles — of refined copper	21.8	6.0	4.8	0.0 & 3.8	0.0 & 3.0	25.0	35.0
740811	copper wire — of refined copper — of which the maximum cross-sectional dimension exceeds 6 mm	44.2	6.0	4.8	0.0	0.0	25.0	35.0
741110	copper tubes and pipe — of refined copper	28.7	6.0	4.8	3.8	3.0	30.0	35.0
Subtotal: major products		1 405.1						
Total: all copper exports		1 534.6						



**Table 6**  
**Value of Imports and Canadian Tariff Rates on Selected Copper Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
740200	unrefined copper; copper anodes for electrolytic refining	28.3	0.0	0.0
740311	refined copper and copper alloys, unwrought — cathodes and sections of cathodes	44.7	0.0	0.0
740400	copper waste and scrap	63.7	4.0 & 10.2	2.7 & 3.0
740710	copper bars, rods and profiles — of refined copper	35.1	4.0–10.3	2.7 & 3.0
740721	copper bars, rods and profiles — of copper-zinc base alloys (brass)	62.0	4.0–10.3	2.7 & 3.0
740729	copper bars, rods and profiles — other	8.9	4.0–10.3	2.7 & 3.0
740811	copper wire — of which the maximum cross-sectional dimensions exceeds 6 mm	18.2	4.0–10.3	2.7 & 3.0
740819	copper wire — other	16.0	4.5 & 10.2	3.0
740911	copper plates, sheets and strip, of a thickness exceeding 0.15 mm — of refined copper — in coils	12.8	4.0 & 10.3	2.7 & 3.0
740921	copper plates, sheets and strip, of a thickness exceeding 0.15 mm — of copper-zinc base alloys (brass) — in coils	16.5	4.0 & 10.3	2.7 & 3.0
741021	copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.15 mm — backed — of refined copper	16.6	4.0 & 10.3	2.7 & 3.0



Table 6 (continued)

**Value of Imports and Canadian Tariff Rates on Selected Copper Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
741110	copper tubes and pipes — of refined copper	29.6	4.0 & 10.3	2.7 & 3.0
741121	copper tubes and pipes — of copper-zinc base alloys (brass)	19.6	4.0 & 10.3	2.7 & 3.0
741220	copper tube or pipe fittings (for example, couplings, elbows, sleeves) — of copper alloys	33.0	10.3	3.0
741300	stranded wire, cables, plaited bands and the like, of copper, not electrically insulated	21.7	10.3	3.0
741820	sanitary ware and parts thereof of copper	11.4	10.3	3.0
741999	articles of copper — other	33.5	10.3 & 15.0	3.0 & 9.7
Subtotal: major copper products		471.6		
Total: all copper imports		563.4		



## Importance to Canada

### Nickel Industry

The nickel industry comprises firms engaged in the smelting and refining of nickel, which is sold as cathodes, pellets, shot, powder and briquettes, and nickel oxide. Canada accounts for about 22 percent of the world's nickel production.

About two thirds of the world's nickel consumption is used in the production of stainless steel. Other alloyed steel and iron and steel castings account for 5 percent each of total consumption. Another 12 percent of nickel consumption enters into the manufacture of nickel-based and copper-based alloys used in the chemical, petrochemical, power, nuclear and aircraft industries. Other important uses of nickel are plating, mainly as a base for chrome plating, and in the manufacture of rechargeable batteries, catalysts, ceramics and pigments. Broadly defined, about 55 percent of total nickel demand is from industrial markets, and the balance is from consumer markets.

The Canadian industry is composed of two large, multinational, vertically integrated, Canadian companies — Inco Limited and Falconbridge Limited — and one large Canadian smelting and refining company — Sherritt Inc. In 1993, the industry employed 11 000 people.<sup>1</sup> Shipments of nickel products in 1993 were worth \$1.54 billion, of which about 6 percent were destined for the domestic market. In that year, imports of nickel products amounted to about \$275 million.

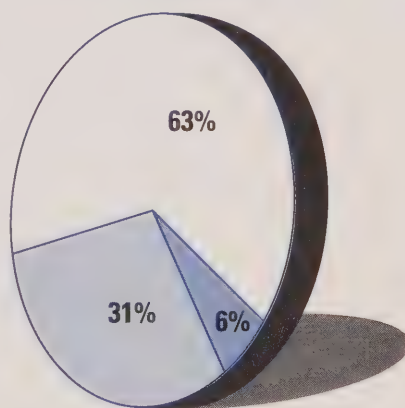
The industry is concentrated in Ontario and Manitoba, which account for approximately 90 percent of shipments. The remainder originates in Alberta.

Over the six-year period ending in 1993, the value of industry shipments declined by a total of 18 percent because of price fluctuations.

## Strengths and Weaknesses

A major competitive advantage enjoyed by Canadian nickel producers is access to domestic deposits of sulphide ore. These require only one quarter the energy inputs needed to smelt nickel from laterite ore, the type most often found in tropical countries. Hence, based on oil prices of US\$20 a barrel, nickel production from laterite ore could cost 1.2 to 1.5 times more than that from sulphide ore.

**Figure 8**  
**Destinations of Canadian Nickel Shipments, 1993**



Total value = \$1.54 billion

■ Canada    ■ United States  
□ Other destinations

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.

Another advantage enjoyed by Canadian producers is the presence of valuable co-products including copper, cobalt, platinum-group metals and other precious metals. These co-products improve the profitability of producers, in as much as prices do not necessarily move in unison, and may help smooth out the impact of the price cycles on the companies.

Nickel is traded mostly through direct supply contracts or on commodity exchanges. World prices are established primarily on the London Metal Exchange (LME) or the Commodity Metals Exchange (COMEX) and are generally quoted in U.S. dollars.

Labour costs are a substantial portion of Canadian operating costs, currently estimated at about 35 to 40 percent, although they are down from 50 percent a few years ago. While Canadian wage rates are significantly higher than those in laterite-producing countries, a well-trained work force, advanced underground mining methods and leading-edge processing facilities are all helping the Canadian industry to improve productivity and to maintain lower unit operating costs than its competitors. Canadian nickel producers have little problem in obtaining qualified personnel for smelting operations. However, continuing efforts are being made to attract engineers and workers to the mining operations, which have become highly sophisticated. Potential employees are being offered training programs that involve classroom and work-site learning situations, while engineering students are being offered new mining courses and summer employment.

On the other hand, Canadian environmental regulations present a cost some foreign producers do not face. As a result of the federal-provincial acid rain agreements to reduce sulphur dioxide emissions by 50 percent by 1994, the Ontario government has issued new control orders to Inco and Falconbridge. Under the new regulations, the two companies have had to cut sulphur dioxide emissions at their Sudbury smelters to a combined total of 365 000 tonnes per year by 1994 from the 1980 permissible level of 882 000 tonnes. Essentially this requires the companies to recapture all but 10 percent of the sulphur in the ore, thus increasing the companies' investment expenditures. At the same time, these companies are also seeing improvements in productivity.

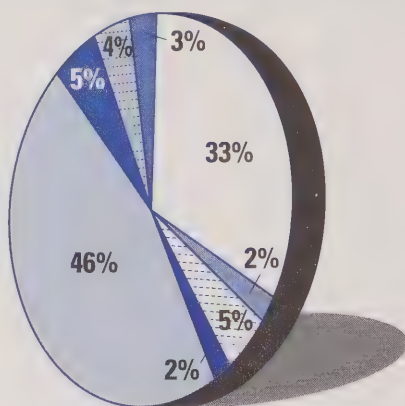
Firms, particularly Sherritt and Inco, carry on research activities for the development of value-added nickel products. For instance, Inco has been developing nickel foam for nickel-based rechargeable batteries, as well as vapour-deposited nickel products, which may contribute to the diversification of Canada's exports of nickel products. Sherritt is a leader in metallurgical technology and is active in the development of advanced industrial materials.

Trade is vital to the nickel industry, as most of its production is exported. The Canadian industry is a major exporter of refined metal, nickel-copper matte (copper is a co-product of nickel), nickel oxide sinter and nickel powders and flakes.

The value of nickel exports declined by a total of 18 percent between 1988 and 1993. In 1993, exports to the U.S. of \$475 million represented 31 percent of the value of total industry shipments. The portion exported to non-U.S. countries totalled \$968 million or 63 percent



**Figure 9**  
**Nickel Exports to**  
**Non-U.S. Destinations, 1993**



Total value = \$968 million

European Union	Norway
Japan	Singapore
Other destinations	Taiwan
Republic of Korea	Hong Kong

of total Canadian nickel shipments. The principal markets for non-U.S. exports were the European Union (46 percent of Canadian nickel exports to non-U.S. destinations), Norway (33 percent), Japan (5 percent), Taiwan (5 percent), Republic of Korea (3 percent), Hong Kong (2 percent) and Singapore (2 percent). Other important destinations included Mexico, China, Brazil and Thailand.

Under the terms of the Canada-U.S. Free Trade Agreement (FTA), U.S. tariffs on nickel products are zero. Under the North American Free Trade Agreement (NAFTA), all of Mexico's tariffs are also zero.

Canada's major trading partners have very few tariffs on nickel products. With the exception of its 0.5 percent tariff on nickel powders and its 4.9 percent tariff on nickel plates, the European Union (EU) has no tariffs on nickel products. Norway has no tariffs at all on nickel products. Japan has many tariffs on nickel

products at zero, although its tariffs on some products are as high as 9.0 percent. Republic of Korea has two unbound tariffs (i.e. it has made no commitments not to increase its tariffs) on primary nickel products, which are at 5.0 percent. It has bound tariffs on some primary and on all semi-fabricated nickel products, but these are at 20 percent.

Generally, Canada's other important trading partners have unbound tariffs on nickel products. This allows them to raise their tariffs, thus promoting domestic production to replace nickel imports. Singapore, Hong Kong, Brazil and Thailand have unbound tariffs on nickel products. Taiwan and China also have unbound tariffs, but these countries are not members of the World Trade Organization (WTO). However, the binding of their tariffs will be addressed when these countries do join the WTO.

Under the WTO, Canada's tariffs are zero on all primary nickel products. With one exception, its tariffs on semi-fabricated nickel products range from 4.5 percent to 10.2 percent. Under the FTA, Canada's tariffs are zero, while, under NAFTA, its tariffs will be zero by January 1998.

There are no significant non-tariff measures to restrict access of Canadian nickel to foreign markets. The industry, however, faces some challenges, which in the long term may affect its access to international markets. These challenges include government regulations related to environmental and health issues. In the pursuit of sustainable development, multilateral



## **Impact of the GATT Uruguay Round on Tariff Barriers**

organizations and participating governments are developing policies and strategies to reduce the perceived risks associated with the production, transportation, use and disposal/recycling of chemicals. Minerals and metals such as nickel are a major target of these organization's activities, as the definition of chemicals includes all minerals, metals and their compounds.

The outcome of agreements or exercises designed to deal with these issues can lead to the imposition of severe constraints or even the outright prohibition on the production, use or trade of certain commodities or their products. For example, such activities have led to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and the Organisation for Economic Co-operation and Development's chemical risk-reduction exercise.

The results of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) will have a long-term beneficial impact on Canada's nickel industry. Tariff barriers on nickel products have been inhibiting the exports of Canadian nickel into some foreign markets. Those barriers had been established in order to protect indigenous nickel producers or to encourage foreign investments in local nickel production facilities. The reduction and binding of tariffs will increase and make more secure Canada's access to foreign markets, and help its nickel producers compete with foreign competitors. It may also promote investments in Canada's nickel industry, particularly the higher-value-added, semi-fabricated segment.

Canada's trade with its two major trading partners will be free, while its trade with its third major trading partner will benefit from significantly lower tariffs. The EU will eliminate its two remaining tariffs. Norway's tariffs are already zero, so the negotiations will not result in any change in Canada's nickel exports, as Norway imports these products for refining purposes. With one exception, Japan will reduce its tariffs by about 50 percent. Its highest relative tariffs will not exceed 3.0 percent, while its highest absolute tariffs will not exceed \$0.62 (44 Yen per kilogram at an exchange rate of ¥1 = \$0.01401).

Canada's other important trading partners will bind and significantly reduce their tariffs. Republic of Korea will bind all its tariffs and reduce them by more than 50 percent, with its highest not exceeding 10 percent. Singapore will also bind all its tariffs; its new tariffs will be 10 percent on all nickel products. With the exception of its tariff on nickel waste and scrap, Hong Kong will bind all its tariffs on nickel products at zero. The tariff binding will provide nickel producers with more secure access to their markets and may also encourage Canadian nickel producers to explore trade opportunities in a number of countries.

Canada's tariffs on nickel products will be reduced in five annual, equal steps, and will be fully implemented in January 1999. Its tariffs will not exceed 3.0 percent. While this will reduce the current level of domestic protection afforded to the nickel industry, it will tend to reduce the manufacturing cost of Canadian products made from nickel and help make these products more competitive on the Canadian and international markets.



**Table 7**  
**Value of Exports and Sample Foreign Tariff Rates on Nickel Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	European Union Tariff Rates		Norway Tariff Rates		Japan Tariff Rates	
			Before	After	Before	After	Before	After
		(\$ millions)	(percent)					
750110	nickel mattes	536.3	0.0	0.0	0.0	0.0	0.0	0.0
750120	nickel oxide sinters	52.7	0.0	0.0	0.0	0.0	¥81/kg 0.0 & 7.2	¥44/kg 0.0 & 3.0
750210	nickel unwrought, not alloyed	696.5	0.0	0.0	0.0	0.0	¥81/kg	¥44/kg
750220	nickel unwrought, alloyed	21.5	0.0	0.0	0.0	0.0	9.0 & 0.0	3.0 & 0.0
750300	waste and scrap	9.7	0.0	0.0	0.0	0.0	0.0	0.0
750400	powders and flakes	114.0	0.5	0.0	0.0	0.0	¥65/kg 6.0 & 0.0	¥41/kg 3.0 & 0.0
750610	plates, sheet, strip and foil	2.3	4.9	0.0	0.0	0.0	7.2 & 0.0	3.0 & 0.0
Subtotal: major products		1 433.0						
Total: all nickel exports		1 442.2						

**Table 8****Value of Imports and Canadian Tariff Rates on Selected Nickel Products, Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
750110	nickel mattes	2.5	0.0	0.0
750120	nickel oxide sinters	124.7	0.0	0.0
750210	nickel unwrought, not alloyed	64.9	0.0	0.0
750220	nickel unwrought, alloyed	6.5	0.0	0.0
750300	waste and scrap	27.3	0.0	0.0
750400	powders and flakes	4.1	10.2 & 0.0	3.0 & 0.0
750512	bars, rods and profiles	4.2	4.5 5.5 & 10.2	0.0
750522	wire, nickel alloy	5.7	4.5 & 10.2	3.0
750620	plates, sheet, strip and foil	17.2	10.2	3.0
750712	tubes and pipes, nickel alloy	16.6	10.2	3.0
Subtotal: major products		273.7		
Total: all nickel imports		275.0		



## Importance to Canada

### Zinc and Lead Industries

This booklet discusses the zinc and lead industries as one industry, as the close association of zinc with lead minerals in many ore bodies has given rise to a common industry structure under which the production of one metal affects the supply of the other. Canada's zinc and lead operations are of two basic geological types. Ore bodies in eastern and western Canada contain mainly zinc and lead, whereas those in central Canada are mostly made up of copper and zinc.

The industry comprises firms engaged in the smelting and refining of zinc and lead, which are sold as slabs, as well as in the manufacture of some semi-fabricated products. Secondary producers as well as primary producers have facilities to recycle lead and, where possible, some zinc.

About 50 percent of zinc consumption is used in the production of galvanized steel, which in turn is used to manufacture products such as automobiles and appliances. Other major uses include zinc alloys (18 percent), brass alloys (16 percent) and miscellaneous uses such as zinc oxide, rolled zinc and zinc powder (16 percent). Almost two thirds of lead consumption is used to produce automotive batteries. Other end uses include chemical applications (16 percent) and alloys (7 percent).

The Canadian industry is composed of five large, multinational, vertically integrated, Canadian companies — Cominco Ltd., Canadian Electrolytic Zinc Ltd., Brunswick Mining and Smelting Corporation Limited, Falconbridge Limited, Hudson Bay Mining and Smelting Corporation Limited — which smelt and/or refine zinc and lead concentrates. It also consists of six companies engaged in the smelting of lead from scrap, primarily from used batteries. In 1993, the industry had 12 establishments, which employed 3 500 people.<sup>1</sup> In that year, shipments of zinc were estimated at \$820 million, with lead shipments at \$115 million; 13 percent of shipments of each were destined for the Canadian market. Imports of zinc and lead in 1993 totalled \$33.2 million and \$19.8 million, respectively.

The industry is located in British Columbia, Quebec, Ontario, Manitoba and New Brunswick.

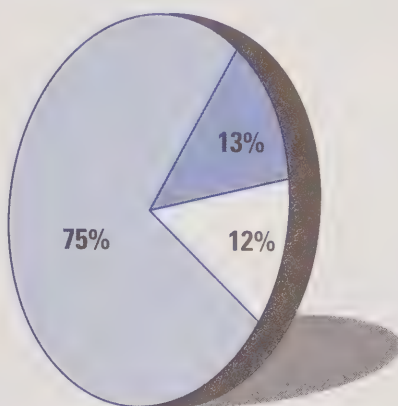
Over the six-year period ending in 1993, the value of Canadian shipments of zinc declined by a total of 24 percent, primarily because of a reduction in zinc prices. During that period, lead shipments experienced a decline in value of 57 percent due mainly to an important reduction in lead prices and, to a lesser extent, in volume.

<sup>1</sup> Source: All statistics are Industry Canada estimates based on data supplied by Statistics Canada.



## Strengths and Weaknesses

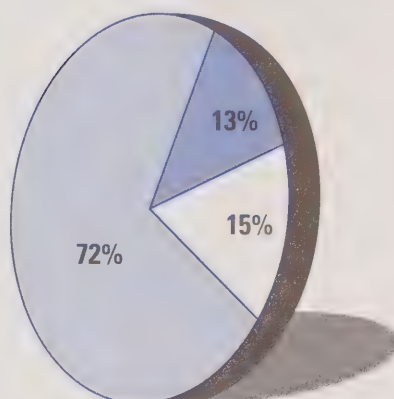
**Figure 10**  
**Destinations of Canadian Zinc Shipments, 1993**



Total value = \$820 million

Canada
  United States
  Other destinations

**Figure 11**  
**Destinations of Canadian Lead Shipments, 1993**



Total value = \$115 million

Canada
  United States
  Other destinations

Canadian zinc and lead operations benefit from the sale of valuable co-products and by-products, which arise from the complexity of Canadian ores. In addition to precious metals such as gold and silver, other metals, acids and fertilizers are also produced. Revenues from these products can make the difference between profit and loss.

Zinc and lead are traded mostly through direct supply contracts or on commodity exchanges. World prices are established primarily on the London Metal Exchange (LME) or the Commodity Metals Exchange (COMEX), and generally prices are quoted in U.S. dollars.

Canada is considered to be on a par with the western world's low-cost zinc smelting and refining operations. Most Canadian plants are modern, employ state-of-the-art technology and enjoy the advantages of long-term supply of concentrates, large-scale integrated production and a high percentage of extraction of metal from concentrate feed. Another major advantage in Canada is the low cost and reliability of electrical energy, which represents a substantial proportion of the cost of producing electrolytic zinc (10 to 20 percent in Canada, 30 percent in Europe). These factors reduce the negative impact of higher wage scales and transportation costs in Canada. As a result, the cost structure of the industry is competitive on a global basis.

Canada's two primary lead smelters utilize older technology and their efficiency is not satisfactory. New, more efficient technologies were developed in the 1970s and 1980s, but depressed lead prices inhibited their immediate adoption. Cominco began construction of a new lead

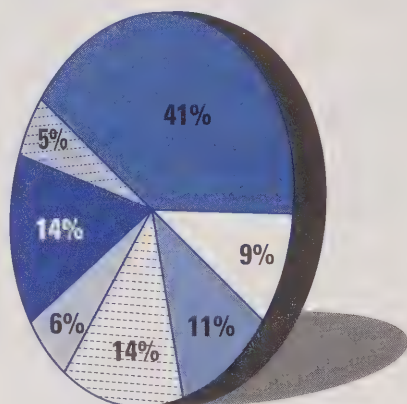


## Trade Patterns and Performance

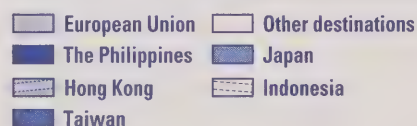
smelter in Trail, British Columbia. It is expected to improve efficiency and productivity while being less harmful to the environment.

Trade in both zinc and lead is important. The industry exports primarily refined zinc, zinc waste and scrap, zinc dust, zinc powders and flakes, refined lead, and lead waste and scrap.

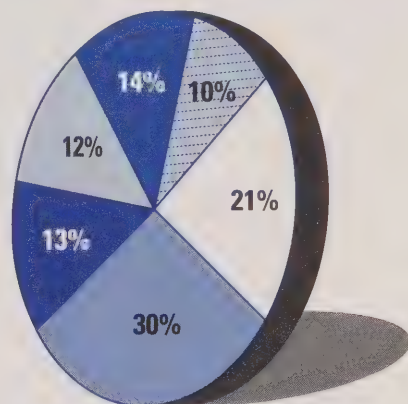
**Figure 12**  
**Zinc Exports to**  
**Non-U.S. Destinations, 1993**



Total value = \$102 million



**Figure 13**  
**Lead Exports to**  
**Non-U.S. Destinations, 1993**



Total value = \$17 million



The value of zinc exports declined by a total of 10 percent between 1988 and 1993. In 1993, the industry's exports to the U.S. of \$610 million represented 75 percent of the value of total Canadian zinc shipments. The portion exported to non-U.S. countries amounted to \$102 million or 12 percent of all its zinc shipments. The principal markets for non-U.S. exports were Taiwan (41 percent of Canadian exports to non-U.S. destinations), the Philippines (14 percent), Indonesia (14 percent), Japan (11 percent), the European Union (EU) (6 percent) and Hong Kong (5 percent). Other markets included Malaysia, Singapore and Thailand.

During that same period, the value of lead exports decreased by a total of 46 percent. In 1993, the industry's exports to the U.S. of \$83 million represented 72 percent of the value of all its lead shipments. The portion exported to non-U.S. countries totalled \$17 million, or 15 percent of its shipments. The principal markets for non-U.S. exports were Taiwan (21 percent of

Canadian exports to non-U.S. destinations), Singapore (14 percent), Switzerland (13 percent), the European Union (12 percent) and Thailand (10 percent). Other markets included Indonesia, Hong Kong, Republic of Korea, the Philippines and Japan.

Under the terms of the Canada-U.S. Free Trade Agreement (FTA), U.S. tariffs on zinc and lead products are less than 5.7 percent and 1.1 percent, respectively, as of January 1, 1995, and will fall to zero by January 1998. Under the North American Free Trade Agreement (NAFTA), all of Mexico's tariffs on zinc and lead products will be eliminated by January 2003.

Some of Canada's major trading partners have relatively high tariffs on zinc products. With the exception of its tariff on zinc waste and scrap, the EU's tariffs on zinc products vary from 3.5 percent to 7.0 percent. Japan's tariffs range from zero to 5.8 percent. In some cases, Japan's tariffs are \$0.11 (¥8) per kilogram at an exchange rate of ¥1 = \$0.01401. All of Republic of Korea's tariffs on zinc products are unbound; that is, it has made no commitments not to increase its tariffs, which are now as high as 25 percent.

Similarly, tariffs on lead products represent a significant barrier to Canadian exports. The EU's tariffs range from zero to 8.0 percent. Switzerland's tariffs are the greater of a specific or a relative tariff, and vary from \$0.22 (Franc 0.20 at an exchange rate of F1 = \$1.1185) per 100 kilograms or 0.2 percent, to \$20.13 (F18.00) per 100 kilograms or 3.4 percent. Japan's tariffs vary from 3.2 percent to 6.5 percent, and there are specific tariffs on some lead products at \$0.11 (¥8) per kilogram. Republic of Korea does not have any bound tariffs on lead products; its unbound tariffs vary from 10.0 percent to 25.0 percent.

Generally, Canada's other major trading partners have unbound tariffs on zinc and lead products. This situation allows them to raise their tariffs so as to pursue import substitution policies. Examples of these countries include the Philippines, Hong Kong, Indonesia, Thailand and Singapore. Taiwan also has unbound tariffs on zinc and lead products, as it is not a member of the World Trade Organization (WTO).

Under the WTO, Canada's tariffs on zinc and lead products range from zero to 17.5 percent and zero to 10.2 percent, respectively. Under the FTA, Canada's tariffs on zinc and lead products are less than 5.2 and 3.0 percent as of January 1, 1995, respectively, and will fall to zero by January 1998. Under NAFTA, all of Canada's tariffs on zinc products will be zero by January 1998, while those on lead products are already zero.

There are no significant non-tariff measures affecting Canada's exports of zinc and lead to foreign markets. The industry, however, faces some challenges, which, in the long term, may affect its access to international markets. These challenges include government regulations related to environmental and health issues. In the pursuit of sustainable development, multi-lateral organizations and participating governments are developing policies and strategies to



## Impact of the GATT Uruguay Round on Tariff Barriers

reduce the perceived risks associated with the production, transportation, use and disposal/recycling of chemicals. Minerals and metals are a major target of multilateral organizations activities, as the definition of chemicals includes all minerals, metals and their compounds.

The outcome of agreements or exercises designed to deal with these issues can lead to the imposition of severe constraints or even the outright prohibition on the production, use or trade of commodities or their products. For example, such activities have led to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and to the Organisation for Economic Co-operation and Development's chemical risk-reduction exercise.

The results of the Uruguay Round multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) will have a positive impact on Canada's zinc and lead industry.

Canada's important trading partners will reduce significantly their tariffs on zinc products. The EU's tariffs will not exceed 5.0 percent and most of them will be 2.5 percent. Japan's tariffs will vary from zero to 3.0 percent; in some cases, Japan will continue to have specific tariffs, but these will not exceed \$0.06 (¥4.5) per kilogram. Republic of Korea will bind and reduce all its tariffs with its new tariff rates varying from 3.0 to 13.0 percent.

Tariffs on lead products will also be reduced. The EU's tariffs will be less than 6.0 percent and they will be 2.5 percent on most products. Switzerland's highest tariff will be 2.3 percent, or \$13.42 (F12.00) per 100 kilograms. Japan's tariffs will vary from zero to 3.0 percent, or \$0.06 (¥4.5) per kilogram. Republic of Korea will bind and reduce all its tariffs with rates varying from 3.0 to 13.0 percent.

Some of Canada's other important trading partners will bind and reduce significantly their tariffs on zinc and lead products. The more advanced developing countries will bind and reduce all their tariffs, while the less advanced developing countries will bind and reduce only some. For instance, the Philippines will bind all its tariffs on zinc products, which will vary from 10.0 to 40.0 percent. Singapore will bind all its tariffs on lead products, and reduce them to 10 percent. Hong Kong will bind some of its tariffs on zinc at zero. The binding of tariffs will provide zinc and lead producers with more secure access to their markets, as they will face little risk of tariff increases. This will encourage Canadian zinc and lead producers to explore trade opportunities in a number of countries.

Canada's tariffs on zinc and lead products will be reduced to a maximum of 3.0 percent in five annual, equal steps, and will be fully implemented in January 1999. While this will reduce the current level of domestic protection afforded to the zinc and lead industry, it will tend to reduce the manufacturing cost of Canadian products made from zinc or lead and help make these products more competitive on the Canadian and international markets.



Table 9

**Value of Exports and Sample Foreign Tariff Rates on Zinc Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	European Union Tariff Rates		Japan Tariff Rates		Republic of Korea Tariff Rates	
			Before	After	Before	After	Before (unbound)	After (bound)
		(\$ millions)	(percent)					
790111	unwrought zinc, not alloyed, containing 99.99%≥ zinc	348.5	3.5	2.5	¥8/kg	¥4.3/kg & 0.0	20.0	10.0
790112	unwrought zinc, not alloyed, containing 99.99%≤ zinc	302.5	3.5	2.5	¥8/kg	¥4.3/kg & 0.0	20.0	10.0
790120	unwrought zinc alloys	6.9	3.5	2.5	¥7.8/kg & 0.0	0.0 – ¥4.3/kg	20.0	10.0
790200	zinc waste and scrap	21.4	0.0	0.0	1.9	0.0	20.0	3.0
790310	zinc dust	14.8	4.4	2.5	5.8	3.0	25.0	13.0
790390	zinc powders and flakes	7.5	4.4	2.5	5.8	3.0	25.0	13.0
790790	articles of zinc	9.2	7.0	5.0	5.8	3.0	25.0	13.0
Subtotal: major products		710.8						
Total: all zinc exports		712.1						



**Table 10**

**Value of Exports and Sample Foreign Tariff Rates on Lead Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Exports	European Union Tariff Rates		Switzerland Tariff Rates		Japan Tariff Rates	
			Before	After	Before	After	Before	After
		(\$ millions)	(percent)					
780110	unwrought lead, refined	67.9	3.5	2.5	F0.2/ 100 kg or 0.2	F0.14/ 100 kg or 0.1	¥8/kg	¥2.7/kg & 0.0
780191	unwrought lead, containing antimony	6.5	3.5	2.5	F0.2/ 100 kg or 0.2	F0.14/ 100 kg or 0.1	6.5 or ¥5.8/kg	0.0-3.0 or ¥3.1/kg
780199	unwrought lead, not elsewhere specified	20.1	0.0 & 3.5	0.0 & 2.5	F0.2/ 100 kg or 0.2	F0.14/ 100 kg or 0.1	4.7 or ¥8/kg & 6.0	0.0-3.0 or ¥4.5/kg
780200	lead waste and scrap	1.1	0.0	0.0	F0.2/ 100 kg or 0.2	F0.14/ 100 kg or 0.1	3.2	2.1
780600	articles of lead	3.1	6.0 & 8.0	0.0 6.0	F10.0/ 100 kg or 1.7 & F18.0/ 100 kg or 3.4	F6.8/ 100 kg or 1.2 & F12.0/ 100 kg or 2.3	5.8	3.0
Subtotal: major exports		98.7						
Total: all lead exports		100.0						

**Table 11**

**Value of Imports and Canadian Tariff Rates on Selected Zinc Products,  
Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
790111	unwrought zinc, not alloyed, containing 99.99%≥ zinc	1.5	0.0	0.0
790120	unwrought zinc alloys	11.8	17.5	3.0
790200	zinc waste and scrap	1.9	0.0	0.0
790400	zinc bars, rods, profiles and wire	1.2	10.2 & 8.0	3.0
790500	zinc plates, sheets, strip and foil	1.3	5.5 & 10.2	3.0
790600	zinc pipes or tubes and fittings	4.7	10.2	3.0
790790	articles of zinc	9.0	5.5 & 10.2	3.0
Subtotal: major products		31.4		
Total: all zinc imports		33.2		



**Table 12**  
**Value of Imports and Canadian Tariff Rates on Selected Lead Products,**  
**Before and After Implementation of the World Trade Organization**

HS Code	Product Description (major products)	Value of Imports	Canada Tariff Rates	
			Before	After
		(\$ millions)	(percent)	
780110	unwrought lead, refined	6.4	10.2	3.0
780200	lead waste and scrap	8.4	0.0	0.0
780600	articles of lead, not elsewhere specified	3.3	10.2	3.0
Subtotal: major products		18.1		
Total: all lead imports		19.8		



## Impact of the GATT Uruguay Round on Measures Other than Tariffs on All Metals Industries

The Uruguay Round of multilateral trade negotiations have resulted in substantial changes to world trade rules. These changes may have a substantial impact on individual metals industries. However, as the rules are of general applications, their impact is discussed for the industries as a group.

First, in parallel with the Uruguay Round of negotiations, the major steel-producing countries attempted to negotiate a Multilateral Steel Agreement (MSA). The intent of the MSA was to discipline, reduce and/or eliminate subsidies to the steel industry as well as to eliminate other non-tariff measures, while ensuring fair and secure access to steel export markets. While discussions have not terminated and there is still some potential for an agreement, it proved impossible to negotiate an MSA during the timeframe of the Uruguay Round. Nonetheless, improvements made to trade rules as a result of the negotiations will have a positive effect on the steel industry.

The Agreement on Subsidies and Countervailing Measures will impact the metals industries significantly both through clarifying whether subsidies are prohibited, actionable or non-actionable, and by ensuring due process in countervailing measure proceedings. The agreement under certain conditions will exclude subsidies granted for research and pre-competitive development, regional development and environmental (pollution abatement) purposes as an issue for possible trade challenges by our trading partners. The agreement will, however, prohibit subsidies contingent upon the use of local content or on exports. It will provide Canadian companies with the means to take actions against subsidized metal products, which displace Canadian metals in foreign markets, including the subsidizing country's domestic market. The agreement will continue to provide Canadian companies with the means to take actions against subsidized metal products, which cause injury to producers in the Canadian market. The new provisions will facilitate penetration into foreign markets by Canadian firms.

The Agreement on "Anti-Dumping" Measures includes increased discipline on injurious dumping and improved transparency, due process in anti-dumping proceedings and a "sunset" clause limiting the duration of anti-dumping orders. The agreement will continue to allow Canada the right to apply anti-dumping measures — that is, measures against imports of a product at an export price below its "normal value," usually the price of the product in the domestic market of the exporting country — if such dumped products are found to cause material injury to Canada's metal producers. The new transparency, due process and sunset provisions will benefit Canadian metal producers by improving the timeliness and fairness of other countries' anti-dumping regimes.



The Agreement on Technical Barriers to Trade will encourage countries to use international standards. It will reduce the possibility that technical regulations and standards, including labelling requirements, create unnecessary obstacles to trade. The improved trade disciplines will provide greater assurance that foreign technical regulations and standards do not unduly deny access to Canada's metal products.

The Agreement on Government Procurement expands coverage to significant new areas of procurement, and improves the disciplines applicable to government procurement. The agreement now includes construction contracts, including subcontracts for metals and other materials. While coverage for Canada at this point is limited to purchases on the part of central government departments and agencies, negotiations are continuing with a view to expanding the scope of the Procurement Agreement to include reciprocal access to purchases by state enterprises and sub-national governments. The expanded coverage will open significant export opportunities for Canadian metal producers.

The World Trade Organization (WTO), which replaces the GATT as of January 1, 1995, has established a Committee on Trade and Environment. Its mandate is to review the relationship of environmental measures to trade rules. The priorities include the relationship between the provisions of the multilateral trading system and certain environmental issues, namely:

- environmental requirements for products, such as standards, technical regulations, packaging, labelling, and recycling
- trade measures for environmental purposes, including those pursuant to multilateral environmental agreements
- the effect of environmental measures on market access, and the environmental benefits of removing trade restrictions and distortions.

The committee's work will clarify the rights and obligations of countries and thus eliminate the possible threat of protectionist trade measures being invoked.





